

Pushing the Envelope			
2008 Mathematics			
Grade Level Articulations			
<b>Arizona Mathematics</b>			
<b>Grade 5</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Physics and Math (pgs. 43-63)	AZ	MA.5.1.1.PO 5	Understand and apply numbers, ways of representing numbers, and the relationships among numbers and different number systems: Use ratios and unit rates to model, describe and extend problems in context.
Physics and Math (pgs. 43-63)	AZ	MA.5.3.4.PO 1	Analyze how changing the values of one quantity corresponds to change in the values of another quantity: Describe patterns of change including constant rate and increasing or decreasing rate.
Pushing the Envelope			
2008 Mathematics			
Grade Level Articulations			
<b>Arizona Mathematics</b>			
<b>Grade 6</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
History of Aviation Propulsion (pgs. 5-9)	AZ	MA.6.4.4.PO 1	Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements: Determine the appropriate unit of measure for a given context and the appropriate tool to measure to the needed precision (including length, capacity, angles, time, and mass).
Types of Engines (pgs. 11-23)	AZ	MA.6.3.3.PO 4	Represent and analyze mathematical situations and structures using algebraic representations: Evaluate an expression involving the four basic operations by substituting given fractions and decimals for the variable.
Types of Engines (pgs. 11-23)	AZ	MA.6.4.4.PO 1	Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements: Determine the appropriate unit of measure for a given context and the appropriate tool to measure to the needed precision (including length, capacity, angles, time, and mass).
Chemistry (pgs. 25-41)	AZ	MA.6.3.3.PO 4	Represent and analyze mathematical situations and structures using algebraic representations: Evaluate an expression involving the four basic operations by substituting given fractions and decimals for the variable.
Chemistry (pgs. 25-41)	AZ	MA.6.4.4.PO 6	Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements: Describe the relationship between the volume of a figure and the area of its base.

Physics and Math (pgs. 43-63)	AZ	MA.6.3.3.PO 4	Represent and analyze mathematical situations and structures using algebraic representations: Evaluate an expression involving the four basic operations by substituting given fractions and decimals for the variable.
<b>Pushing the Envelope</b>			
<b>2008 Mathematics</b>			
<b>Grade Level Articulations</b>			
<b>Arizona Mathematics</b>			
<b>Grade 7</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines (pgs. 11-23)	AZ	MA.7.3.3.PO 2	Represent and analyze mathematical situations and structures using algebraic representations: Evaluate an expression containing one or two variables by substituting numbers for the variables.
Chemistry (pgs. 25-41)	AZ	MA.7.3.3.PO 2	Represent and analyze mathematical situations and structures using algebraic representations: Evaluate an expression containing one or two variables by substituting numbers for the variables.
Chemistry (pgs. 25-41)	AZ	MA.7.4.4.PO 6	Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements: Identify the appropriate unit of measure to compute the volume of an object and justify reasoning.
Physics and Math (pgs. 43-63)	AZ	MA.7.1.1.PO 1	Understand and apply numbers, ways of representing numbers, and the relationships among numbers and different number systems: Recognize and convert between expressions for positive and negative rational numbers, including fractions, decimals, percents, and ratios.
Physics and Math (pgs. 43-63)	AZ	MA.7.1.2.PO 3	Understand and apply numerical operations and their relationship to one another: Solve problems involving percentages, ratio and proportion, including tax, discount, tips, and part/whole relationships.
Physics and Math (pgs. 43-63)	AZ	MA.7.3.3.PO 1	Represent and analyze mathematical situations and structures using algebraic representations: Write a single variable algebraic expression or one-step equation given a contextual situation.
Physics and Math (pgs. 43-63)	AZ	MA.7.3.3.PO 2	Represent and analyze mathematical situations and structures using algebraic representations: Evaluate an expression containing one or two variables by substituting numbers for the variables.

Physics and Math (pgs. 43-63)	AZ	MA.7.5.2.PO 9	Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions, and recognize their applications: Solve logic problems using multiple variables and multiple conditional statements using words, pictures, and charts.
<b>Pushing the Envelope</b>			
<b>2008 Mathematics</b>			
<b>Grade Level Articulations</b>			
<b>Arizona Mathematics</b>			
<b>Grade 8</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines (pgs. 11-23)	AZ	MA.8.3.3.PO 2	Represent and analyze mathematical situations and structures using algebraic representations: Evaluate an expression containing variables by substituting rational numbers for the variables.
Chemistry (pgs. 25-41)	AZ	MA.8.3.3.PO 2	Represent and analyze mathematical situations and structures using algebraic representations: Evaluate an expression containing variables by substituting rational numbers for the variables.
Physics and Math (pgs. 43-63)	AZ	MA.8.3.2.PO 4	Describe and model functions and their relationships: Identify functions as linear or nonlinear and contrast distinguishing properties of functions using equations, graphs, or tables.
Physics and Math (pgs. 43-63)	AZ	MA.8.3.3.PO 2	Represent and analyze mathematical situations and structures using algebraic representations: Evaluate an expression containing variables by substituting rational numbers for the variables.
Physics and Math (pgs. 43-63)	AZ	MA.8.5.2.PO 10	Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions, and recognize their applications: Solve logic problems involving multiple variables, conditional statements, conjectures, and negation using words, charts, and pictures.
<b>Pushing the Envelope</b>			
<b>2008 Mathematics</b>			
<b>Grade Level Articulations</b>			
<b>Arizona Mathematics</b>			
<b>Grades 9-10</b>			
<b>Activity/Lesson</b>	<b>State</b>	<b>Standards</b>	
Types of Engines (pgs. 11-23)	AZ	MA.9-10.4.3.PO 4	Specify and describe spatial relationships using rectangular and other coordinate systems while integrating content from each of the other strands: Verify characteristics of a given geometric figure using coordinate formulas for distance, midpoint, and slope to confirm parallelism, perpendicularity, and congruence.
Chemistry (pgs. 25-41)	AZ	MA.9-10.3.2.PO 3	Describe and model functions and their relationships: Use function notation; evaluate a function at a specified value in its domain.

Chemistry (pgs. 25-41)	AZ	MA.9-10.3.3.PO 2	Represent and analyze mathematical situations and structures using algebraic representations: Solve formulas for specified variables.
Chemistry (pgs. 25-41)	AZ	MA.9-10.4.3.PO 4	Specify and describe spatial relationships using rectangular and other coordinate systems while integrating content from each of the other strands: Verify characteristics of a given geometric figure using coordinate formulas for distance, midpoint, and slope to confirm parallelism, perpendicularity, and congruence.
Chemistry (pgs. 25-41)	AZ	MA.9-10.4.4.PO 3	Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements: Determine the effect that changing dimensions has on the perimeter, area, or volume of a figure.
Physics and Math (pgs. 43-63)	AZ	MA.9-10.3.2.PO 3	Describe and model functions and their relationships: Use function notation; evaluate a function at a specified value in its domain.
Physics and Math (pgs. 43-63)	AZ	MA.9-10.3.2.PO 4	Describe and model functions and their relationships: Use equations, graphs, tables, descriptions, or sets of ordered pairs to express a relationship between two variables.
Physics and Math (pgs. 43-63)	AZ	MA.9-10.4.3.PO 4	Specify and describe spatial relationships using rectangular and other coordinate systems while integrating content from each of the other strands: Verify characteristics of a given geometric figure using coordinate formulas for distance, midpoint, and slope to confirm parallelism, perpendicularity, and congruence.
Physics and Math (pgs. 43-63)	AZ	MA.9-10.4.3.PO 5	Specify and describe spatial relationships using rectangular and other coordinate systems while integrating content from each of the other strands: Graph a linear equation or linear inequality in two variables.
Rocket Activity (pgs. 69-75)	AZ	MA.9-10.3.3.PO 2	Represent and analyze mathematical situations and structures using algebraic representations: Solve formulas for specified variables.